Cricket batting placement distribution analysed by bowling line and length at the 2013 ICC Champions Trophy

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Abstract

Fielder positioning is a key task undertaken by cricket captains, and contributes greatly to a team's success, as bowling maiden overs has been shown to be more important in the later stages of an international tournament (Petersen et al., 2008).

We analysed the performance analysis data of hit ball distribution on the cricket playing field at the 2013 ICC Champions Trophy Tournament to determine the particular distribution resulting from specific bowling delivery classifications. Each bowling delivery was assigned one pitch position from a matrix of 18 possible width (line) and length combinations, based on the first bounce location. Hit deliveries were allocated into one of ten regions on the field, based on the directional angle the ball travelled after being hit. Each of these regions corresponds to a specific cricket fielding position. Furthermore, each delivery was further classified by several variables that influence its resultant position, including the handedness of both the bowler and batsmen, the bowlers type classification (fast, medium, off spin, leg spin), and the side of the wicket the bowler delivered from (over or around-the-wicket).

Of the 7157 coded deliveries analysed from the 12 matches, 3690 (52%) were hit and had field co-ordinates (used in the creation of the wagon wheel graphic) to show the direction and distance the ball travelled. The most numerous delivery was a good length ball (pitching in line with the stumps) from a right handed fast bowler bowling over-the-wicket to a right handed batsman. The corresponding fielding position hit distribution showed this is most likely to be hit to the cover position (25%), and least likely hit to the fine leg position (1%). Interestingly, approximately two thirds (61%) of these deliveries are hit in front of the wicket in the field segment from cover to the long-on position, which is same proportion for full balls (60%) of the same line. In comparison, only one in ten (12%) bouncer deliveries (very short length balls rising sharply at the batters upper chest or head) on the stump line are hit in this region. Interestingly, three-quarters (76%) of these bouncer deliveries are hit on the batsman's leg-side in the region from mid-wicket to long leg.

The main contribution of this paper is quantifying the hit fielding position distribution by classified delivery type, information that to date has not been published in the scientific literature. A captain's field placement should exploit these known hit distributions for each delivery type. As a captain is reliant on bowlers to execute their delivery of the ball to the appropriate pitch position, bowlers who are the most capable and consistent in delivering these instructions should be selected.

References

Petersen, C., Pyne, D.B., Portus, M.R., Cordy, J., & Dawson, B. (2008) Analysis of performance at the 2007 Cricket World Cup, International Journal of Performance Analysis in Sport, 8:(1) 1-8